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SPIDERS FROM PANAMA.

BY NATHAN BANKS.

WITH FOUR PLATES.

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No. 3.— *Spiders from Panama*

BY NATHAN BANKS

THROUGH the kindness of Dr. Thomas Barbour and in company with Dr. W. M. Wheeler, I spent about two months during 1924 in Panama. From about the middle of June to near the middle of August we divided our time between the island of Barro Colorado, the vicinity of Panama City, and points along the Panama railroad. Thus all the collecting was done in the low land of the country. The island of Barro Colorado presents primitive forest conditions, while elsewhere the collecting was in more open country. From the evidence of the spiders collected it is plain that the fauna is closely related to that of South America, rather than to that of the general Central American fauna. Dr. Petrunkevitch, with material from higher regions of Panama, reached just the opposite conclusions. The affinity with South America is especially distinct when viewing the spiders of Barro Colorado. A number of South American species were found here which were unknown or rare in Central America. One of the most common Acrosomas was *A. schreibersi*, a species common in South America, but previously noted from Central America only in one coast locality.

It is also evident that the Pacific side shows the greater relation to the Central American fauna, while the Atlantic side contained the greater number of South American forms. There are often differences in localities but a few miles apart. As, for example, on Barro Colorado one of the most common Leucauge was *L. mandibulata*, not found elsewhere, while across the lake at Frijoles the common Leucauge was *L. argyra*, not found on Barro Colorado, but taken elsewhere along the canal.

I have included in the list a few species taken by Dr. Wheeler on a previous trip, some obtained by Dr. Barbour, some received from Mr. Shropshire, and a few from other collectors, but especially from Dr. C. L. Dodge in 1925. In the spring of 1924 Professor Allee of Chicago collected on Barro Colorado, and these spiders were studied and described by Dr. Chamberlin in 1925. I have included these in this report, mostly as synonyms, but I have not found the type of one of the species. Altogether in this list are 241 species in 26 families; 30 species are considered new.

A number of other specimens are unplaced, particularly in the Atidae near the genera *Freyia* and *Phyale*; specimens of one sex can

hardly be identified from descriptions or figures of the opposite sex; likewise males of *Epeira* were often left unplaced. Besides these there are a number of spiders recorded from Panama in the *Biologia*, in Petrunkevitch's recent paper, and some Attidae described by Peckham. The arrangement of families adopted is partly that of Thorell, modified to show the increasing complexity of the male palpus. Thus the Attidae are placed after the Clubionidae and the web-making forms at the end.

The Pholeidae have a fairly complicated palpal organ, but it is very different from others, and the general structure of the body and legs is more nearly like Scytodidae than like Theridiidae.

From Barro Colorado are recorded 172 species.

Of the localities, Barro Colorado, Frijoles, Ft. Sherman, Ft. Davis, Mt. Hope, Gamboa, Red Tank, and Ancon are in the Canal Zone; the other localities are in the Panama Republic.

THERAPHOSIDAE

SERICOPELMA RUBRONITENS Auss.

San Pablo (Lesley coll.), Aspinwall, Ft. Sherman, February; Corozal (Capt. Stuart), Ancon, March-April (Zetek, Barbour and Brooks); and Barro Colorado (Allee). Evidently this is the most common tarantula in the region. *S. communis* Cb. is the same species.

ISCHNOTHELE GUIANENSIS Walek.

One from Barro Colorado, July 13.

PACHYLOMERUS RUGOSUS Karsch

One from Ft. San Lorenzo, Zetek collection, agrees well with the description of the Costa Rica type.

FILISTATIDAE

FILISTATA HIBERNALIS Htz.

One from Corozal (J. B. Shropshire).

DYSDERIDAE

ARIADNA COMATA Cb.

Bella Vista, July, nests in holes in bark of large trees.

OONOPIDAE

DYSDERINA PLENA Cb.

Barro Colorado, 16 July; young male from Mt. Hope, 8 July, is probably the same.

CAPONIDAE

NOPS MACULATA Sim.

One from Barro Colorado, 20-24 June.

ZODARIIDAE

STORENA BARROANA Chamb.

One from Barro Colorado, 13 July, described from the island under the name of *Naibena*; if a special genus is necessary for the Central American forms *Tencdos* is available.

PALPIMANIDAE

OTIOTHOPS MACLEAYI sp. nov.

Figs. 26, 42

Cephalothorax uniform dark red-brown, abdomen dark gray brown, front legs clear red-brown, other legs pale yellowish, sternum and basal plate of venter red-brown. Cephalothorax with many fine appressed hairs, and in front near eyes with longer erect ones. A.M.E. much the largest, not one-half their diameter apart, A.S.E. larger than P.S.E., situated about their long diameter apart and twice as far behind the A.M.E. Legs densely clothed with fine hair, forming a brown fringe on the inner side of the front tibia, metatarsus, and base of tarsus, and tufts of dark brown hair at the tips of all other tibiae; no spines on the legs; front patella plainly longer than tibia. Sternum with large granules all over surface, but those on middle smaller; mandibles with granules in front, palpi fringed on outer tip with black bristles; basal plate of venter rather truncate behind.

Length 6.5 mm.

A female from Barro Colorado Island, Canal Zone, 20-24 June. Separated from the Venezuelan species by the more widely separated posterior median eyes.

SCYTODIDAE

SCYTODES LONGIPES Lucas

Common. Barro Colorado, 20-24 June, 14-29 July; Taboga Island, 29 June.

SCYTODES CHAMPIONI Cb.

Barro Colorado, 20-24 June, 14-20 July, 2 August; Ft. Davis, 5 July.

SCYTODES GUTTIPES Simon (?)

Two from Barro Colorado, 25 June, appear to be this species described from Venezuela, but may be different.

LOXOSCELES RUFIPES Lucas

Barro Colorado, 20-24 June, 23 July; Bella Vista, 8 August. Also from Prof. Allee on Barro Colorado.

PHOLCIDAE

METAGONIA CAUDATA Cb.

Several from Barro Colorado, 20-24 June, 18 July.

MODISIMUS MACULATIPES Cb.

Common, Barro Colorado, June, July, underside of large fallen leaves on the ground.

MODISIMUS PULCHELLUS sp. nov.

Figs. 16, 21, 68

Cephalothorax yellowish; faint dark marks each side of middle, and a dark spot back of the eye-tubercle, latter with pale line in the middle; legs dull greenish yellow to brownish, darker bands near tips of femora and tibiae (not always distinct). Abdomen pale, with blackish or bluish black spots above, arranged so as to leave a pale median stripe, also dark marks on the sides, and one in the middle of the venter.

The small median eyes are not present; on the male mandibles in front are several minute teeth near base of the fang and one higher up toward the middle. The male palpus has the spur on the femur sharp-pointed, the long tarsal process is simple at tip, but thicker toward base, without a spur; the tube at tip of bulb has an inner tooth. The

epigynum shows a broad dark area, with an oblique ridge each side, connected at base.

Length ♀ 2.5 mm., ♂ 2.8 mm., femur I of male 8 mm. Canal Zone, Barro Colorado, 18-29 July, and August.

BLECHROSCELIS MODESTA sp. nov.

Figs. 24, 39, 41, 80

Cephalothorax pale yellowish, unmarked, except black around each group of eyes; abdomen pale gray, with a faint black mark each side just before the spinnerets; legs pale, in the female, with a dark band just before tips of femora and tibiae, the extreme tip paler. Cephalothorax with short hair above, sternum with much longer hair; abdomen more hairy, those below the longer; legs with fine hair, those near tip of femora of male more bristly. Eyes forming two groups with the small A.M.E. between the A.S.E., the posterior eye-row plainly procurved. Mandibles of male with two little teeth each side just above the base of the fang. Abdomen plainly longer than cephalothorax, moderately convex above; vulva showing two circular openings about diameter apart. Male palpus has a slender spur-like process on the inner side near tip of femur, the tarsus is produced into a long, slender, evenly curved, tapering, spine-like process.

Length 2 mm., femur I ♂ 6.5 mm., ♀ 4.5 mm.

Canal Zone, Barro Colorado, 20-24 June, 13 July; Ft. Davis, 3 July. *B. annulipes* Keys from Colombia is very much larger, and the shape of abdomen would seem to place it in *Coryssocnemis*.

DRASSIDAE

EHEMUS IOTUS sp. nov.

Fig. 58

♀ Pale yellowish throughout, a small black spot over the A.M.E. Eyes subequal in size, the P.M.E. elliptical and oblique, at less than their short diameter apart, the P.S.E. slightly angular on inner side; A.M.E. about their diameter apart; the S.E. nearly touching; both rows procurved. Abdomen truncate at base, flattened, near spinnerets slightly reticulately darkened. Legs moderately long, each femur with two long spines above and two or three (hind legs) shorter ones near tip, tibiae I and II with a pair beyond middle and one at tip, these metatarsi with a subbasal pair; hind tibiae with 1, 1, 2 below, two each side and one above near base, hind metatarsi with four or five near base and

two or three at tip. Vulva with a broad median plate, narrowed in front, and two circular cavities close together behind it.

Length 4.2 mm.; cephalothorax 1.8 mm.

Panama, Las Sabanas, 7 July.

A female, possibly not quite mature, from Barro Colorado has a longer abdomen, the cavities behind the plate of vulva more separated, and the front tibia has 1, 1, 1 spines beneath.

CESONIA CINCTA sp. nov.

Fig. 79

♀ Black; cephalothorax a shining black, with some white hairs; abdomen a dull or greenish black with a narrow median white band, and traces of a white band at extreme base. Femora shining black, front legs partly pale on patella, and pale from near base of tibia out; patellae of third and fourth legs mostly very pale, the tibiae darker, metatarsi blackish, the tarsi pale; coxae III and IV also very pale; sternum blackish, scarcely paler in middle, tips of maxillae pale. Cephalothorax narrow in front, a distinct dorsal groove; eye-rows rather far apart, hind eye-row just noticeably recurved, and a little broader than front row; P.M.E. smaller than P.S.E., slightly oblique, fully two diameters apart, a little closer to P.S.E., quadrangle of M.E. much longer than broad, front eye-row straight, A.S.E. larger than A.M.E. Mandibles rather small, with long bristles in front, no teeth on hind margin. All legs hairy, especially long on femora below; front legs short, femora thickened, with two long spines above, tibia with 1, 1 spine below, these metatarsi and tarsi scopulate; hind femur with two spines above, the tibia and metatarsus with a number of spines.

Length 6.2 mm.; cephalothorax 2.7 mm.

Adult from Las Sabanas, Panama, 7 July, another (rather smaller) from Ancon, March (Wheeler); young from Barro Colorado.

CLUBIONIDAE

CORINNINAE

CORINNA MUCRONATA Cb.

Barro Colorado, 16 July; Ft. Sherman, 3 July.

CORINNA BULBOSA Cb.

The *C. cutypa* of Chamberlin from Barro Colorado is this species, the abdomen of the type is somewhat discolored; Petrunkevitch has

also recorded and described it from Panama, San Lorenzo, and there is a young specimen from this place in the Chamberlin collection.

TRACHELAS BARROANUS Chamb.

Described from the island; also taken there 18 July. Close to *T. truncatulus* Cb., except that I fail to see the three points at the tip of the palpal bulb. However, I doubt if these are always constant, and if the cusps on the legs are variable, then both fall to *T. bispinosus*.

MICARINAE

CASTIANEIRA LACHRYMOSA Cb.

Barro Colorado, 10 to 26 July.

CASTIANEIRA LUCTUOSA Cb.

Figs. 52, 71

A female from Almirante, March (J. D. Smith). The cephalothorax is not as slender behind as in *C. memnonia*; the abdomen is broader behind, the basal dorsal shield is broader, and the legs shorter, especially the front pair.

CASTIANEIRA MEMNONIA Koch

Figs. 11, 50, 64

Several specimens of both sexes from Barro Colorado, 14-29 July.

The femora are mostly black, but near tip partly pale, rest of front legs pale, but some dark at base of tibia; hind legs largely dark, but pale on patella and tarsus; coxae pale. Eyes close together, the quadrangle of M.E. scarcely broader behind, the P.M.E., about one and a half diameter apart, closer to P.S.E. On the abdomen there is a tendency to form a white band at the constriction, especially on sides and venter. In the female the basal shield is more than twice as long as broad, slightly tapering behind, in the male it is broader and reaches nearly to the constriction. The tibia of I and II has three pairs of spines below, the last pair at apical third, these metatarsi with two pairs below; hind tibia with median and preapical pairs of spines below, hind metatarsi plainly longer than tibiae, with two pairs of spines below (toward tip) and two each side. The male palpi are short, the femur of the female palpus has four erect bristles in a row on front side. The vulva is dark and rather obscure, but apparently a cavity near each posterior corner.

MAZAX SPINOSA Cb.

Common on ground, Barro Colorado, June and July; Mt. Hope, 8 July.

Specimens agree generally with the description; details of color differ somewhat, none of the specimens have tibia IV banded near base; there are white hairs on the cephalothorax, marks on sides of the abdomen, and in some specimens one or even two transverse pale bars on dorsum toward tip. All have the two spines at the base of the abdominal shield. The main reason for it possibly being different is that all the hind femora have a prominent long spine near base on a slight elevation; Cambridge says nothing of this, but the spines might have been broken off of his specimen.

MAZAX SEGREGATA Chamb.

Described from Barro Colorado.

Probably equals *M. plana* Cb.; the difference in eyes cited is very slight, the spines on the tibia might well vary from five to six. The vulva in his type shows the white hairs each side as Cambridge mentions.

MYRMECOTYPUS CINCTUS sp. nov.

Fig. 56

Cephalothorax yellow-brown, darker on sides; legs pale, femora scarcely embrowned, hind pairs with dark streak on each side, hind tibia and metatarsi dark, the patella and tarsi, however, very pale. Abdomen brown, a broad pale band before middle; sternum dark yellow-brown; venter brown. Cephalothorax nearly twice as broad in the middle as in front; posterior eye-row but little broader than anterior eye-row, both nearly straight, the eyes rather large, the A.M.E. little larger than the A.S.E. and hardly as large as posterior eyes, P.M.E. scarcely diameter apart, much closer to the equal P.S.E. Legs of moderate length, front tarsus about three-fourths of the tibia; femora with two or three spines above, the longest one near base, front tibia with three pairs below, metatarsus with two pairs; hind tibia and metatarsus with two pairs below, the tibia with two lateral and one dorsal toward tip. Fang-groove with two little teeth behind; maxillae long, truncate at tip, outer side straight; sternum but little longer than broad. Abdomen much longer than the cephalothorax, not twice as long as broad, female with a small basal, dorsal shield reaching back

almost to the pale band, at base of the shield are two tiny bristles. The vulva shows two reddish openings in a corneous plate, about a diameter apart.

Length 3.5 mm.

One from Mt. Hope, Canal Zone, 8 July.

MYRMECOTYPUS SIMILIS sp. nov.

Fig. 70

Cephalothorax uniform dark red-brown, with some appressed white hair; palpi almost black; legs whitish, but much marked with dark, front and hind femora almost wholly dark brown, second and third femora with dark streaks, front tibia with dark line each side and one above, metatarsus and base of tarsus dark brown, rest of tarsus very pale, second tibia with similar dark lines, metatarsus rather darkened, third tibia slightly darkened and with three dark lines, metatarsus and tarsus both darkened, fourth tibia, metatarsus, and tarsus darkened, but the basal part of the metatarsus is clothed with white hair. Sternum dark brown; coxae (except part of hind coxae) pale. Abdomen black above and below, venter with a curved white mark on each side before the middle, dorsum with appressed greenish and white pubescence, the white forming some median spots toward base and near tip but hardly bands; near tip the abdomen has much long, pale hair. Cephalothorax fully two and one-half times as long as broad; both eye-rows about straight, the posterior eye-row scarcely longer than the anterior one, A.M.E. rather larger than the other eyes, the A.S.E. about equal the posterior eyes, quadrangle of M.E. rather higher than broad, P.M.E. fully two diameters apart, and only one-half so far from the equal P.S.E. Femora with two or three spines above, basal one longest, front tibia with three pairs below, also with lateral and dorsal spines. Front tarsi short, not two-thirds of the metatarsi; sternum more than twice as long as broad. Maxillae long and straight outside, tip truncate. Abdomen slender, over three times as long as broad, constricted from above before middle, a basal dorsal shield reaching about one-third way back, abdomen distinctly pedicelled at base.

Length 9 mm.

One female from Barro Colorado, 24 June.

Related to *Macaria salticina* Taetz., and with it should form a separate genus or subgenus. Elongate form like *Castiancira*, but the eyes ally it to *Myrmecotypus*.

CLUBIONINAE

CLUBIONA SERICEA Cb.

Common, Barro Colorado, 20-24 June, 10-18 July, 2 August.

CHIRACANTHIUM FERUM Cb.

Gamboia, 7 July; Colon, 16 August.

EUTICHURUS sp.

Fig. 77

Barro Colorado, 4 August. One female; it is pale, with two brown stripes on the cephalothorax. It is doubtless the female of one of the four species described from Colombia, but all based on males.

ANYPHAENINAE

SILLUS LONGISPINUS Cb.

Barro Colorado, 20-24 July.

TEUDIS ROSEUS Cb.

Ancon, 23 March (W. M. Wheeler), on *Cordia*.

AYSHA SIMPLEX Cb.

One male from Taboga Island, 29 June.

AYSHA SIMILARIS sp. nov.

Fig. 75

♀ Cephalothorax pale brownish yellow, rather darker in front; mandibles red-brown; sternum pale; abdomen pale yellowish, above with two reddish stripes from base to tip, toward tip with a few reddish dots between stripes and near sides; venter pale, a reddish mark near spinnerets and a patch of short black hair a little behind vulva on the spiracular furrow; legs pale, marked with reddish at base and tip of tibia and metatarsi, especially noticeable on the hind legs, femora slightly reddish toward tip, especially on the front pairs. Legs and body with long white hair. Eyes subequal, anterior eye-row straight, A.M.E. about one-half diameter apart, rather closer to A.S.E.; posterior eye-row slightly procurved, P.M.E. about one and a half diameter apart and almost as far from the P.S.E. Mandibles large, divergent, and slightly porrect. Tibiae I and II with three pairs of spines

below, two on each side, these metatarsi with a sub-basal pair of spines only; hind tibiae with three pairs below, two above, and three each side. Vulva similar to that of *A. gracilis* Htz. but the median process does not reach so far forward.

Length 10–12 mm.; cephalothorax 4–4.5 mm.

Canal Zone, Barro Colorado, 17–29 July.

WULFILA MANDIBULATA Petrunk.

Figs. 7, 12, 14, 27

One male from Mt. Hope, 8 July.

Described by Petrunkevitch as a *Cragus*, but that genus has many more spines on the legs; ten or more spines beneath metatarsi I and II, while according to Petrunkevitch's own description this has but two pairs. He notices the fringe of black hairs near posterior end of cephalothorax, an unusual character. Two or three of the largest and longest hairs on the front of the mandibles arise just above the fang and are curved and somewhat parallel to the fang.

Wulfila is best separated from *Teudis* and *Sillus* by the much more slender legs, as well as the smaller size. It is doubtful if the slight difference in the number of tibial spines will hold when more species are known.

ATTIDAE

ATTINAE

Marpissini

MARPISSA MAGNA Peckh.

Barro Colorado, 20–24 June.

MENEMERUS BIVITTATUS Duf.

Colon, 17 June, Gamboa, 9 July.

DEZA SUMPTUOSA Perty.

Barro Colorado, 20–24 June; one specimen of this handsome spider, previously known only from South America.

FUENTES PUNCTATUS Peckh.

One female from Las Sabanas, 7 July. It agrees with Peckham's type, which was described as a *Balmaceda*. The vulva is practically the same as in *Metacyrba taeniola* but the abdominal markings readily

separate it. *F. punctatus* has but two little spines under tibia I, these near tip. The type of *Balmaceda* was taken by Peckham as *B. picta*; this type (which is here) has three pairs of well-developed spines under tibia I, and the front legs are not nearly as swollen, it will go close to *Maevia* (probably the same). It has a fissidentate tooth on the mandible.

The type of *Fuentes* is *pertinax*. The type has but two little spines under tibia I, the mandible one minute tooth, the vulva is similar to that of *F. punctatus*. *Metacyrba taeniola* from the United States agrees also in the tibial spines, the tooth on mandible, and the vulva. The three should go into one genus, *Fuentes*, as follows:—

- pertinax* (*Fuentes*)
- punctatus* (*Balmaceda*)
- taeniola* (*Metacyrba*)

Fuentes lineatus from the United States has three pairs of spines under tibia I and so is not a *Fuentes*; *Onandaga* Peckh. can be used for it, if it is not lumped into *Maevia*.

Admestina has the cephalothorax more parallel-sided, and the eyes overhang the jaws, but it comes close to *Fuentes*. The case of *Paramarpissa* is still uncertain, as I have not seen the type. The species I describe agrees in structure but is much smaller.

PARAMARPISSA INSIGNIS sp. nov.

Figs. 44, 78

Pale yellowish; cephalothorax broadly darker yellowish to brownish on sides; eyes on black spots and a pair of black spots in middle of ocular area; clypeus brown, with white hair; abdomen pale, with two dark stripes not reaching one half way back, just behind them a curved transverse black mark, sometimes connected to the stripes in front, and at tip a broad black band, rest of body and the legs pale, unmarked. Cephalothorax moderately long and low, flat above, eye-region broader in front, eyes of second row rather nearer to first than to third row; mandibles small, a minute, scarcely noticeable tooth below; sternum narrowed in front between coxae I; all legs rather short, fourth pair longest, first plainly thickened, femora strongly convex above, but twice as long as broad, tibia swollen, convex below, tarsi as long as metatarsi, both very short; on tibia I below near tip is one small spine, metatarsi I and II with two pairs very short spines below, one or two minute spines near tip of femora above, otherwise legs without spines, except hind tibia may have a faint one near base beneath. Abdomen

elongate; spinnerets prominent; vulva very small and indistinct, showing plainly only two small dark pits, and faintly behind them several curved lines.

Length 3.6 to 5 mm., cephalothorax 1.5 mm. Three specimens, two plainly marked and have evidently oviposited, the other, with enlarged abdomen, scarcely shows any markings.

Barro Colorado, 20-24 June, 17 July.

This runs to *Paramarpissa* in Cambridge's table, but I do not feel sure that it belongs there.

Rudrini

RUDRA GENICULATA Peckh.

One male, Barro Colorado, 22 June.

Dendryphantini

DENDRYPHANTES CUPREUS Cb.

A female, Mt. Hope, 8 July.

DENDRYPHANTES DENTIGERA Cb.

One male, Barro Colorado, 26 July.

DENDRYPHANTES LONGIPALPIS Cb.

Barro Colorado, 20-24 June.

DENDRYPHANTES LAETABILIS Peckh.

Red Tank, 30 June; Frijoles, 10 July.

DENDRYPHANTES MOMUS Cb.

Ancon, 23 March (W. M. Wheeler).

Habrocestini

PELLENES PARATUS Peckh.

One male, Barro Colorado, 20-24 June.

Ballini

ZYGOBALLUS RUFIPES Peckh.

One female, Red Tank, 1 July.

ZYGOBALLUS TIBIALIS Cb.

One female, Ancon, 23 March (W. M. Wheeler).

HOMALATTOIDES ROSEUS Cb.

From Barro Colorado, 29 July.

BEATA MAGNA Peckh.

One female, Barro Colorado, 26 July.

Amycini

AMYCUS BENIGNA Peckh.

One male, Barro Colorado, 22 July.

AMYCUS PALPINALIS Cb.

One male, Barro Colorado, 13 July.

AMYCUS QUADRIGUTTATA Cb.

Barro Colorado, 20-24 June, 17 July.

AMYCUS SPIRALIFER Cb.

Barro Colorado, 29 July.

COBANUS MANDIBULARIS Peckh.

Barro Colorado, 20 July.

COBANUS SUBFUSCUS Cb.

Barro Colorado, 23 July.

COBANUS EXTENSUS Peckh.

Barro Colorado, 20-24 June, one male.

Phyalini

The forms that Cambridge places in *Cyrene* Simon divides into two genera: *Freyia* and *Phiale* (originally *Phyale*), both of Koch 1850. Simon puts these in different tribes; according to his table *Freyia* should have the second eyes at or behind middle while *Phyale* should have them before middle. While I believe that these two genera are so close as to be distinguished with difficulty, I have kept them separate. *Phyale* has page precedence over *Freyia*. *Cyrene* must be a synonym of *Freyia*, and *Pardessus* of *Phyale*. The type of *Phyale* (*gratiosus*) has the second eyes only a trifle before the middle.

PHYALE GEMINATA Cambr.

A female has the vulva as figured by Cambridge, but he did not describe the markings. It greatly resembles *albosignata* but the median

pale stripe on abdomen is rather more narrow, the cephalothorax is darker behind than in front (as in *bicarata*), the median white stripe distinct. The venter is heavily spotted with black; the front legs are nearly black, except pale tarsi and metatarsi, the other legs pale, the hind pair with dark at tips of some joints. There is no dorsal spine on tibiae III and IV; the second row of eyes plainly behind middle.

Barro Colorado, 20-24 June, 15 July.

PHYALE PANAMENSE Chamb.

Red Tank, 1 July; Bella Vista, 7 August.

PHYALE SIMPLICICAVA Cb.

Common, Barro Colorado, July; Ancon, 6 August; Las Sabanas, 7 July; Gamboa, 9 July; Red Tank, 30 June. The male is possibly the *Cyrene bifurcata* Cambridge.

PHYALE DELECTA Peckh.

One from Gamboa, 9 July.

PHYALE MAGNIFICA Bks.

Barro Colorado, 24 July. Described from Costa Rica.

FREYA BILOBATA Cb.

Ancon, 6 August; Red Tank, 1 July; Gamboa, 9 July; Frijoles, 10 July.

FREYA FLAVA Cb.

Frijoles, 10 July.

FREYA RUSTICA Peckh.

Barro Colorado, 22 July, one male.

FREYA JUSTINA sp. nov.

Fig. 32

♂ Cephalothorax reddish, with some white scales, eyes on black spots, a white stripe each side; legs I and II black, the tarsi and base of the metatarsi pale; tibia and metatarsus I with quite long, but not very dense hair below; hind legs pale, with dark marks at tips of several joints and a black spot beneath near base of femur; mandibles and sternum reddish; abdomen with broad black area on venter, above with a pale median area, slightly broken behind into herring-bone marks, a

row or stripe of dark on each side with irregular edges, not very definite, and outside of these also pale. Tibia I with 3-3 spines below, first pair near base; metatarsus I without lateral spines, patellae I and II with small spine on inner side; tibiae III and IV with basal dorsal spine; eyes of second row at about middle (not before). Male palpus has the bulb scarcely projecting at base, on inner side the tube forms a circle, the tip of tibia has a short, truncate process. Length, 7.2 mm.

From Barro Colorado, Canal Zone, July 24.

FREYA BIFURCATA Cb.

Males from Bella Vista, 6 July and Ancon Hill, 6 August, quite probably the male of *Phyale simplicicava* Cb.

FREYA PROMINENS Cb.

From Barro Colorado, 17 July, several.

FREYA FRONTALIS sp. nov.

Figs. 8, 9

♂ Cephalothorax red-brown, eyes on black spots, a large median (sometimes rhomboidal) white spot in the front part of eye-region, narrowly connected behind to an elongate diamond-shaped white mark near the dorsal groove, lower sides from below dorsal eyes very plainly white, sharply marked; clypeus with white hair in the middle; mandibles red-brown, sternum pale, with faint dark marks; legs pale, tibiae I and II mostly dark, with dark hair and fringe beneath, their metatarsi dark on apical halves, hind tibia dark on tip, especially beneath, metatarsi dark at tip, femora dark below near base; venter much spotted with black; dorsum of abdomen with dark stripe each side, the inner edge irregular, the pale median stripe between broken by dark dots. Eyes of second row at about middle or a trifle behind; tibia I with 3-3 spines below, the first pair near base; tibiae III and IV with basal spine above; patella I with spine on inner side. The male palpus has a very long tube arising from near base of bulb; on outer side at base is a hook, hairy at base.

Length 5.2 to 6.5 mm.

From Barro Colorado, Canal Zone, July.

CORYTHALIA CONSPECTA Peckh.

Barro Colorado, 1 August.

CORYTHALIA MURCIDA Cb.

Barro Colorado, 17 July.

CORYTHALIA SPIRALIS Cb.

Common, Barro Colorado, July, Frijoles, 10 July; Gamboa, 9 July; Ft. Davis, 5 July; Ancon, 6 August.

CORYTHALIA PANAMANA Petrunk.

Bella Vista, 6 July, 8 August.

CORYTHALIA BICINCTA Petrunk.

Barro Colorado, June, July, 1 August.

CORYTHALIA CANALIS Chamb.

Fig. 18

One male, the type, taken by Prof. Allee on Barro Colorado; described as a *Saitis*. Tibia I with three spines on outer side beneath, the first near base, two on inner side beneath. Femur III and IV with a long spine toward base above; tibia III without spine above. Related to *C. brevispina* but with shorter spine to tibia of palpus.

CORYTHALIA OBSOLETA sp. nov.

Figs. 10, 69

♂ Similar in many respects to *panamana* and *bicincta*; there are black fringes to the first three pairs of legs, but the palpus shows no white hairs, entirely black. The cephalothorax is black, with blue reflections, behind there are two narrow white marks reaching up from hind margin toward the dorsal groove, sometimes more or less obsolete, side-margins not white. Abdomen black, no pale band at base, just beyond middle with three or four very narrow, slightly curved pale bands, sometimes partly obsolete; venter and sternum black; legs black except the pale hind pair, tarsi of third pair very pale as in allied species. Male palpus with a stout tibial spur, in some views showing serrations; embolus similar to *panamana*, but stouter. The female is similar, but paler throughout, the abdomen above with the same markings, venter mostly pale, mottled with dark; sternum and coxae pale; legs mostly pale, femora mostly black; vulva similar to *bicincta* but no round dark bodies in front.

Length 5-6 mm.

Common on Barro Colorado, June and July.

The males of *Corythalia* with fringes on the legs can be tabulated as follows: —

- | | | |
|----|---|------------------|
| 1. | Fringes on legs I and II only | 6 |
| | Fringes on leg III also | 2 |
| 2. | Tibial spur of palpus very slender; cephalothorax with white on each side behind | 3 |
| | Tibial spur of palpus stout | 4 |
| 3. | Abdomen with large pale spot in the middle, besides transverse marks | |
| | <i>opima</i> | |
| | Abdomen with only two transverse white bars, patella of palpus with white hair | <i>spiralis</i> |
| 4. | Patella of palpus snow-white; abdomen broadly yellowish at base. <i>bicincta</i> | |
| | Abdomen not yellowish at base | 5 |
| 5. | Pale marks on abdomen fairly wide; some white on palpus; cephalothorax with white on each side behind | <i>panamana</i> |
| | Pale marks on abdomen very narrow; no white on palpus; sides of cephalothorax not white | <i>obsoleta</i> |
| 6. | Abdomen with pale median stripe | <i>canalis</i> |
| | Abdomen without stripe | <i>conspicua</i> |

PLEXIPPUS PAYKULLI A. & S.

One, Taboga Island, 29 June.

SIDUSA RECONDITA Peckh.

Barro Colorado, 18 July.

THIODINA PUERPERA Htz.

Barro Colorado, June, July, August.

THIODINA SYLVANA Htz.

Ancon, 6 August; Bella Vista, 8 August; Red Tank, 30 June; Gamboa, 9 July, Ft. Davis, 5 July.

CHAPODA PECKHAMI sp. nov.

Figs. 5, 15, 65

♂ Cephalothorax yellow brown, darker behind, eyes on a connected black spot, some white hair near eyes; on each posterior side is a large pale spot, definitely outlined above. Abdomen pale, with many dark dots and streaks on the sides, making a more or less definite dark stripe

each side, behind in middle are faint chevrons; venter and sternum pale. Legs pale, tibia and metatarsi of front pairs dark, in hind pair with apical dark spot; palpi red brown, femur with a small rounded process near inner tip (not as large as in *C. festiva*), patella not as strongly swollen on inner side as in *C. festiva*, a large patch of snow-white hair on outer side of femur, and very short white hair at tip of palpus. Female similar; cephalothorax darker on sides and with a pale median streak behind; abdomen with irregular stripe each side, leaving a rather narrow pale median stripe, behind are some chevrons; venter with broad dark spot, made up of three dark streaks. Legs mostly pale, but hind pairs dark at base and tips of some joints; palpi snow-white.

Length 4 mm.

Barro Colorado, 22 June, July, and 4 August.

ATELURIUS INCERTUS sp. nov.

Fig. 61

Cephalothorax red brown, darker in eye-region, with some fine white hair; legs and sternum pale unmarked; abdomen dull blackish above, dotted with pale, a narrow white band around base reaching back to middle on the sides, behind it an oblique white band reaching up on dorsum, and behind these another pair of white oblique bands, nearly meeting on dorsum, and short, narrow white marks over base of spinnerets; venter pale, the mandibles reddish. Cephalothorax shaped much as in true *Attus*, the surface finely roughened, the dorsal groove faint and far behind, eye-region rather short, much broader than long, scarcely broader behind, eyes of second row nearer to anterior laterals than to the dorsal eyes; mandibles with one stout tooth below; sternum broad in front; legs moderately short, patella I nearly as long as tibia I, all femora with very stout spines, three near tip and two near middle, tibia I and II with three on outer side below, one (at tip) in inner row, the first of outer row is near base, these metatarsi with two pairs below, no laterals; hind tibia with one spine below near middle and two at tip, also two on inner side, metatarsi with several at tip. Abdomen short and broad, the vulva shows a very distinct angulate incision, behind and in front some curved lines.

Length 3.5 mm.

From Barro Colorado, July.

The type of the genus has the spines reduced in number on the tibia but in somewhat different amount; by the stout spinose legs it goes in this group, and the other genera have the eye-region broader behind;

reduction of the tibial spines, rather than an exact amount of reduction, will doubtless be a better generic character.

JOLLAS PERITAS sp. nov.

Fig. 81

Cephalothorax reddish brown, darker in eye-region, with short white hair, on the side margins forming a white line, clypeus scantily haired; mandibles reddish; sternum pale brown; legs pale yellowish, front femora darker above, others near tip. Abdomen dull blackish, with some small irregular pale spots and dots above, and fine pale streaks or lines on the sides, venter pale, above with much appressed yellow hair, and some white hair, but scarcely forming a pattern, a tuft of white hair over base of the spinnerets. Cephalothorax much like true *Attus*, dorsal groove not noticeable, eye-area about one third wider than long, about as wide behind as in front, the dorsal eyes rather large and looking slightly backward, the eyes of second row about one half way between dorsal and anterior laterals. Legs of moderate length, the front patellae rather long, one or two small spines near tip of femur above, the tibiae I and II with three pairs of long spines below, the first pair near base, tibia II with one on inner side, these metatarsi with two pairs below; hind tibia with but one spine below (near base) and two on each side, these metatarsi with two whorls of spines; mandibles fairly stout, without teeth below; last joint of palpus densely haired.

Length 3.8 mm.

From Barro Colorado, July or August (C. W. Dodge).

PACHOMIUS DYBOWSKII Peck.

Barro Colorado, 20-24 June; Frijoles, 10 July; Ft. Davis, 5 July; Ft. Sherman, 3 July. Not uncommon, previously known only from South America.

Synemosynini

MYRMARACHNE CENTRALIS Peckh.

Barro Colorado, 20-24 June; 13 July; 2 August; Taboga Island, 29 June.

PARADOMOETAS FORMICINA Peckh.

Barro Colorado, 24 June, one female.

PECKHAMIA VARIEGATA Cb.

Las Sabanas, 7 July; Taboga Island, 29 June.

SIMONELLA AMERICANA Peckh.

Barro Colorado, June, one specimen.

SARINDA FORMOSA sp. nov.

Fig. 6

Cephalothorax red-brown to black, in front with some metallic scales, some white hairs below dorsal eyes, clypeus and mandibles with white hair; abdomen dark brown, with a pale spot each side at constriction, hardly forming a band; sternum and venter black. Palpi dark, except pale base of femora, with long, dense, black fringe on inner side; legs pale, the tibiae and metatarsi and front tarsi darker, but other tarsi very pale, front femora dark on inner sides. General structure similar to *S. nigra*, the male palpus however, different, as in figure. The thoracic part of the cephalothorax (σ^7) about one and three-fourths as long as the cephalic part. Front tibia of male very long, much longer than the protarsus plus tarsus, nearly as long as femur plus patella, with three pairs of spines below, all short, the first pair near the base; protarsi I with three pairs of rather long spines; tibiae III and IV with three spines below, and others on the sides.

Length 6 mm.

From Barro Colorado, 20 July.

FLUDA PRINCEPS sp. nov.

Figs. 22, 38, 73

Cephalothorax yellowish to reddish brown, eyes on black spots. Legs pale, tibia and patella I lineate with black; femur II lined in front, legs III and IV lineate nearly to tip of the metatarsi; sternum pale; abdomen pale, two oblique dark bands on basal part before the constriction, usually connected on lower sides and sometimes united to form a large dark spot above, behind the constriction a broad dark band with an anterior median extension to the mark in front, and over the spinnerets a large dark spot; venter pale. Cephalothorax not twice as long as broad, eye-region occupying about one half of length, slightly narrower behind, behind the dorsal eyes a slight impression, then sloping behind, not elevated; eyes of the second row fully as near dorsal as to lateral anterior eyes, but on the same black spot as the lateral anteriors. Legs slender, femora I enlarged, more in the male, but without crest of hair, tibia I with five (or six) pairs of long spines below, basal ones longest, others grading shorter, metatarsi with three pairs of very

long spines, the first pair nearly as long as the joint, the last pair reaching two-thirds of the tarsus; tibia II with four pairs of spines, metatarsus II with three pairs; other legs without spines. Abdomen moderately elongate, plainly constricted near middle, the apical part the larger, especially in the male.

Length 4 mm.

From Barro Colorado, 16 July.

The type of *Keyserlingella* (*K. perdita*) has the spines as in *Fluda*, and the alleged differences in eye-area are very slight; the two genera should be united. The females of the two species of *Fluda* have a mark before the vulva, this is not present in this species nor the female of *K. perdita*, and I might have considered this new species a form of *K. perdita* but Peckham figures a male of what he calls *K. perdita* and that is different from the male of my species. The male of *Martella opica* (correctly placed by Simon as a *Fluda*) is also quite different. Of *K. cara* the type was a male; the vial contains also a female which is very close to *K. perdita*, probably the same; the male has but three pairs of spines on tibia I and but two pairs on the metatarsus I, so cannot belong to *Fluda*.

LYSSOMANINAE

LYSSOMANES

The four species taken can be separated as follows: —

1. Protarsus I but little more than twice as long as tarsus; tibia and protarsus fringed throughout length; each femur with but one spine . . . *completus*
Protarsus I fully three times as long as the tarsus; tibia and protarsus not fringed; each femur with several spines 2
2. Abdomen with the dark stripes reaching only a little beyond middle where they are connected, then a dark spot at tip; apical part of palpus extremely long, tibia of palpus with group of spines near middle.
dissimilis
Abdomen with a dark stripe each side from base to tip 3
3. Fang of mandible very sinuous; some teeth on mandible fairly large; palpal organ without basal projecting part *mandibularis*
Fang of mandible not sinuous; all teeth on mandible very small; palpal organ with a large basal projection *consimilis*

LYSSOMANES DISSIMILIS, sp. nov.

Figs. 1, 2, 25, 62

♂ Mandibles elongate; beneath with four teeth, the apical one much larger than others; fang rather stout, slightly sinuous.

Palpus long and slender; the free part of tarsus nearly twice as long as the basal part, the stout outer spine of bulb has a membranous extension similar to that of *L. spiralis* but much longer, the inner spine very long and slender; the tibia hardly one-half of tarsus, but much longer than the patella, on outer side of the tibia is a group of stout bristles.

Leg I elongate, slender, protarsus fully three times as long as tarsus; tibiae I and II with five pairs of spines beneath, protarsi with three pairs, all femora with spine before middle, beyond middle and near tip.

Cephalothorax pale, rather reddish around anterior eyes, other eyes on black spots, lower margin and a median thoracic stripe dark. Abdomen pale, basal half with a stripe each side, connected rather beyond middle, and toward apex is a large dark spot; venter and sternum pale; legs pale, apical part of tibia and protarsus (especially the first pair) dark.

The female is marked as in the male, the legs with spines as in male, but those under the front tibiae are very long and much stouter than in the male.

Length 6-7 mm.

From Barro Colorado, July, and Ft. Sherman, 3 July.

LYSSOMANES CONSIMILIS sp. nov.

Figs. 4, 30

♂ Mandibles elongate, with five or six minute, subequal teeth on the lower edge, well separated, two or three stiff spines above at tip; fang evenly and slightly curved, very slender, no basal tooth. Palpi rather short, patella a little shorter than the tibia, latter with a row of fine hairs on the outer side, spur rather long, broad and concave within; tarsus much longer than the tibia, but the apical part is hardly as long as the basal; palpal bulb large and very complicated, with a long basal projection. Leg I long and slender, without fringes, apical joints with many bristles; protarsus fully three times as long as tarsus; tibiae I and II with four pairs of spines beneath, three pairs under these protarsi, tibiae III and IV with one or two spines, all femora with a spine before and one a little beyond middle, and two near tip. Cephalothorax pale, eyes on black spots, lower margin and a median stripe on thoracic part brown. Abdomen pale, with two dark lines united in front. Legs pale, tibia III and IV dark at tip, leg I rather dark on femur and tip of tibia.

Length 6 mm.

From Barro Colorado, 22 July.

LYSSOMANES COMPLETUS sp. nov.

Figs. 3, 29

♂ Mandibles not very elongate, with one large tooth below, over three times its length from tip; fang without spine at base, but below near base it is widened.

Palpus slender, tibia and patella subequal, and each about as long as tarsus, apical part of tarsus short, only about one-half as long as basal part, tibia without brush of hairs, only scattered hairs near tip, apical spur blunt, simple. Leg I elongate, protarsus but little more than twice as long as tarsus; patella, tibia, and protarsus with a short fringe all along on under side, black, except white on basal part of the protarsus, tibia and protarsus also with a short black fringe on outer upper side; tibiae I and II with three pairs of spines beneath, two pairs below on these protarsi, each femur with but one short spine above near tip. Cephalothorax with reddish eye-area, eyes surrounded with black, thoracic part pale, lower sides especially behind brown; abdomen pale, a blackish spot each side at base, and behind are two large median black spots, between these are white spots; venter and sternum pale; legs also pale, but the front pair are reddish brown, except tarsus and the basal part of protarsus pale.

The eye-area is not as much narrowed behind as in most species, and the eyes of the third row about in line with those of the second and fourth.

Length 9-10 mm.

From Barro Colorado, 24 July.

By the fringes all along tibia it is related to *L. minaccus*, but that species has a much longer protarsus, different palpus, etc.

LYSSOMANES MANDIBULATUS Cb.

Barro Colorado, 20-24 June; Bella Vista, 8 August.

CHIONOSCOPIUS FLAVUS Peckh.

Fig. 13

A male from Ft. Davis, 5 July.

C. flavus was known from one female from "Central America," and as this is from the same region, and agrees in having the dark at tip of hind tibia and base of hind protarsi, I presume it is the unknown male of that species. It agrees with *C. gracilis* in many ways; the abdomen and cephalothorax are black, the eye-region, however, with a large pale

spot; the front and second femora have a black line in front from base to near tip (thus longer than in *C. gracilis*) and also have a similar line on the posterior face. The male palpus is black, the bulb is not nearly as globose as in *C. gracilis*, and the apical process is not tapering to a point as in *C. gracilis*, but suddenly narrowed before the black tip.

THOMISIDAE

MISUMENINAE

MISUMENA NIGRIPES Tacz.

One from Ft. Sherman, 3 July.

MISUMENA PALLENS Keys.

Barro Colorado, 31 July; Gamboa, 9 July; Bella Vista, 7 August; Las Sabanas, 7 July.

RUNCINIA MAGNA Keys.

One from Ancon, 6 August.

RUNCINIA PARVA Keys.

Barro Colorado, 20-24 June.

TMARUS INTENTUS Cb.

One from Ft. Davis, 5 July.

TMARUS STUDIOUSUS Cb.

Barro Colorado, 18 July.

SYNAEMA JOCOSA sp. nov.

Figs. 43, 59

♀ Cephalothorax yellowish brown to dark brown, nearly uniform throughout; mandibles similar; legs pale yellowish, apical third of tibiae I and II and apical two-thirds of these metatarsi black, tips of hind femur, patella, tibia and metatarsus very narrowly dark. Sternum pale; abdomen pale above, with a large red-brown mark with definite outlines, in front occupying most of the dorsum, at about middle with deep lateral incision each side, then reaching down on sides, and behind a large pale triangular area each side, leaving only a median stripe dark; sides with red-brown; venter mostly pale.

Cephalothorax high, sloping forwards; quadrangle of M.E. barely narrower in front, A.M.E. larger than P.M.E., about one and a half diameter apart, rather nearer to much larger A.S.E., P.M.E. over two diameters apart, much farther from the slightly larger P.S.E. Tibia I and II with four pairs of spines below, three each side, metatarsi I and II with three pairs below, two each side; hind patella with one inner spine; hind tibia with three pairs below, and two each side.

Length 8 mm., cephalothorax 4 mm.

Three from Barro Colorado, C.Z., 20-24 June, 22 July.

PHILODROMINAE

PHILODROMUS TRAVIATUS sp. nov.

Fig. 55

♀ Cephalothorax brown, with numerous small blackish patches, generally darker on sides, base of mandibles dark, sternum pale; legs yellowish heavily maculate with dark brown, which tends to form stripes on front and back sides of all femora, patellae, and tibiae, but above in spots or bands, metatarsi mostly dark; abdomen above brown, with many pale dots, traces of two larger pale patches near middle, toward tip, the marks somewhat in chevrons; the dark of dorsum is sharply limited behind and on posterior sides by a darker brown line which bends up above the spinnerets; venter pale. Cephalothorax short and broad; A.M.E. fully two diameters apart, rather closer to A.S.E., quadrangle of M.E. much broader behind, the P.M.E. fully four times their diameter apart, but only about one-half as far from the equal P.S.E. Legs short, tibia and metatarsus I and II each with three pairs of spines below. Vulva showing a slender median septum, more slender than in *P. decolor*.

Length 3.5 mm., cephalothorax 1 mm.

One from Barro Colorado, C.Z., 20-24 June.

APOLLOPHANES PUNCTIPES Cb.

Ancon, 9 August.

SELENOPIIDAE

SELENOPS MINUTUS Cb.

Two males from Barro Colorado, 26 July.

SELENOPS MEXICANUS Keys

One male from Barro Colorado, taken by Prof. Allee, and named by Mr. Chamberlin, and a female from Ancon, 6 July, Dr. Wheeler, on *Cordia*.

SPARASSIDAE

OLIOS FORMOSUS sp. nov.

Fig. 74

♀ Cephalothorax, legs, and sternum yellowish, the metatarsi heavily scopulate with dark hair; mandibles pale reddish brown. Abdomen above largely dark, with two submedian rows of yellow spots, narrowly separated by dark, with a narrow spear-mark at base, outside of these rows two or three larger pale spots; sides and venter pale, not dotted, but venter with broad black stripe. Body with yellowish hair, not especially long on the abdomen. Quadrangle of M.E. not broader behind, the A.M.E. much larger than the P.M.E., less than their diameter apart, P.M.E. fully one and a half diameter apart; each tibia with two pairs of spines below, besides the short apical pair, and two each side, each metatarsus with two pairs below and two each side. Vulva shows a median plate much longer than broad, narrowed behind, with nearly straight sides, with very narrow opening each side toward base.

Length 15 to 16 mm.

From Barro Colorado, 20-24 June, 13-29 July; Ft. Sherman, 3 July. Also many immature, the latter with abdomen very ornate. In markings it is very near *O. nigrorittatus* Keys. from Peru, but Keyserling's figure of the vulva is entirely different.

PRUSIAS NUGALIS Cb.

Barro Colorado, 17 July.

SPARIANTHIS BARROANA Chamb.

Barro Colorado, 19-29 July.

Described as a *Chemuis* (Clubionid). However the spinnerets are prominent the front legs laterigrade, and seven pairs of spines under tibia I, and the truncature of maxillae as in other Sparassidae. It is near to *S. amazonica* Simon, according to his description, but probably distinct from *S. granadensis* Keys.

SPARIANTHINA gen. nov.

Laterigrade near *Sparianthis*, the spinnerets being upon an apical projection. Eyes in two rows, the posterior row slightly recurved, the

anterior row straight, and much shorter than the posterior row. Cephalothorax broad and flat, like that of *Selenops*. Legs very long and slender, the femora and tibiae about as long as body, with very long spines; palpi very long, in female longer than cephalothorax. Abdomen short, broad, and flattened; sternum cordate, but little broader in front than long; lip broader than long; maxillae slender, twice as long as broad. Mandibles rather long, with three small teeth on lower edge of the groove. In female there appears to be a distinct spiracular rima a little behind the epigynum.

Type *S. selenopoides*.

SPARIANTHINA SELENOPOIDES sp. nov.

Fig. 28

Pale yellowish; cephalothorax with numerous scattered flecks, the larger ones near margin and two near middle; several dots on front of the mandibles, and many on legs and palpi, mostly at bases of spines or hairs; abdomen faintly brown above, with many tiny yellow dots and a large basal pale mark, two very large muscular impressions beyond the middle, the subbasal pair much fainter; sternum and venter pale unmarked. Quadrangle of M.E. plainly broader behind than in front, A.M.E. less than diameter apart, P.M.E. nearly twice diameter apart, P.M.E. largest, all eyes with very distinct black marks around them. Second pair of legs rather longer than first; femora with several spines above, two of them long; tibiae I and II with four pairs of spines, all very long, none at tip, these metatarsi with two pairs near base and one pair near middle, hind tibiae and metatarsi with two pairs below, two each side, and three above. Body and legs with white hair, most noticeable on base and sides of abdomen; the vulva of female very large, showing a median septum, narrow in front, broad behind, and large cavity each side. Male palpi long, tarsus with long tip, the outer side of tibia with two projections, one slender and pointed, the other broad.

Length 6.5 mm., cephalothorax 3 mm., patella plus tibia II of ♂ 10 mm., of ♀ 7.5 mm.

From Barro Colorado, Canal Zone, 17 July.

APHANTOCHILIDAE

APHANTOCHILUS ROGERSI Cb.

One specimen taken by Prof. Bradley at Barro Colorado in March, and sent by him to Prof. Wheeler with specimens of *Cryptoceerus atratus*

for identification. It agrees closely with a specimen from Paraguay and taken with the same ant, and with the figures and description of Cambridge. The figures of Simon (Hist. Nat. I, p. 955) showing a much narrowed clypeal margin, and more separated posterior median eyes, must be another species. Specimens sent by Dr. Reimoser, although adult, are smaller, with smaller basal shield on venter, and less triangular cephalothorax, are also another species.

PISAUROIDAE

TRÉCHALEA MAGNIFICA Petrunk.

Barro Colorado, 18 July, and Rio Esnape (Barbour).

In the posterior central eyes being less than a diameter apart, it is near to *T. extensa* Cb., but specimens from Costa Rica that I identified as *extensa* have a higher clypeus, about four times diameter of central anterior eyes, and the legs are more hairy.

SYNTRECHALEA TENUIS Cb.

Barro Colorado, 13-23 July, on the bark of trees.

THAUMASIA UNCATA Cb.

Barro Colorado, 20-24 June, 13-31 July. Common.

THAUMASIA VELOX Simon

One from Ft. Davis, 5 July.

ARCHITIS TENUIS Simon

Two from Barro Colorado, 23 July.

STABERIUS ACULEATUS Simon

Ft. Davis, 5 July; Las Sabanas, 7 July.

Equal to *Thanatidius spinipes* Sim.

CTENIDAE

ACANTHOCTENUS SPINIPES Keys.

One from Almirante (C. W. Dodge).

CUPIENNIUS FOLIATUS Cb.

Common on Barro Colorado, 20-24 June, 13-31 July. *Ctenus dolomedes* Chamb. is a male of this species; *C. guatemalicus* Strand 1910 is probably the same as *C. minimus* Bks. 1909.

CUPIENNIUS GETAZI Simon

One from Almirante (C. W. Dodge).

CUPIENNIUS COCCINEUS Cb. (?)

Females from Barro Colorado and Ft. Sherman agree with this, except that they have a black ventral stripe; a male would, perhaps, show that it is distinct.

LYCOCTENUS BOGOTENSIS Keys.

Two females from Ft. Randolph, March (J. B. Shropshire).

CTENUS SINUATIPES Cb.

Two females from San Pablo, Panama (Lesley coll.) probably belong here; the vulva is rather more narrow at base than those I have seen from Costa Rica.

CTENUS MEDIUS Keys.

Fig. 57

Two females from Barro Colorado, 13-18 July. These two agree fairly well with specimens of *Ct. medius* from southern Brazil. But each side of the oval bodies is a dark cavity before the rim, and the posterior part of the vulva is black, the anterior part pale. The two specimens, however, are not alike in details; one (after oviposition) shows the vulva as figured, while in the other (before oviposition) the vulva is broader and the oval bodies much less prominent. The abdomen has a pale stripe above. In one the P.M.E. are a little closer together than in the other. I expect that *medius* is the same as *Ct. ornatus* Keys., also from South Brazil. It is different from *incolans* and *supinus*, which I have from Costa Rica.

CTENUS sp.

One specimen from Barro Colorado, June, of a much smaller species belonging to the section with the ocular quadrangle much narrowed in front.

LYCOSIDAE

LYCOSA LONGITARSIS Cb.

Common, Barro Colorado, July, August, Frijoles, 10 July, Ft. Sherman, February (Shropshire).

L. eutypa Chamb., according to type, is the same species.

ARCTOSA PANAMANA Petrunk.

Two from Barro Colorado, 17 July.

SCHIZOGYNA TRISTANI Bks.

Barro Colorado, 17 July.

Pardosa albopilosa Petrunk. is doubtless the same species, the details do not appear exactly the same in various specimens.

ALLOCOSA PANAMANA Chamb.

Fig. 54

Two females from Ft. Sherman, 3 July. This was described from two specimens in very bad condition taken from the stomach of a toad.

The cephalothorax is mostly dark brown, black in the eye-region; through the middle is a broad pale stripe, rather narrow between the posterior eyes, then widened, and the basal part again narrow, in middle of this pale streak are two oblique dark marks; the dark of sides contains four pale spots. Abdomen mostly dark above, with a short, basal median pale mark, and behind numerous irregular pale spots more or less in four rows; venter and sternum pale; legs pale, banded with dark, three bands on each femur, two on tibia and metatarsus.

PIRATA PAGICOLA Chamb.

The type from Barro Colorado is a typical *Pirata*.

OXYOPIDAE

TAPINILLUS LONGIPES Tacz.

Two from Ft. Sherman, 3 July.

PEUCETIA BIBRANCHIATA Cb.

Ancon, 5-6 August; Taboga Island (young).

OXYOPES CLYPEATUS Cb.

Barro Colorado, 24 June, one specimen.

OXYOPES GLOBOSUS Cb.

Barro Colorado, 29 July, one specimen.

OXYOPES SALTICUS Htz.

Ancon, 6 August; Bella Vista, 8 August; Las Sabanas, 7 July; Gamboa, 9 July.

HERSILIDAE

TAMA MEXICANA Cb.

Barro Colorado, 23, 25, 26 July; on the bark of trees, dodging with amazing swiftness.

THERIDIIDAE

THERIDIINAE

Theridiini

THERIDION ALACRE Keys.

Common, Barro Colorado, 20-24 June, 18-31 July; Ft. Sherman, 3 July.

THERIDION FORDUM Keys.

Common, Barro Colorado, 20-24 June; 13-22 July; Taboga Island, 29 June.

THERIDION NIVEUM Cb.

Barro Colorado, 17-23 July; Ft. Sherman, 3 July.

THERIDION ROSTRATUM Cb.

Barro Colorado, 13 July.

THERIDION TAENIATUM Keys.

Common, Barro Colorado, 20-24 June, 19-20 July, 2 August.

THERIDION INDICATUM sp. nov.

Figs. 19, 48

Cephalothorax, legs, mouth parts, and sternum pale yellowish; abdomen whitish. Cephalothorax of male produced in front in a large lobe, seen from above nearly square, the A.M.E. on the side of the lobe, and at tip, are two long, stiff bristles, directed forward. Cephalothorax high behind, seen from side scarcely sloping until near end. Legs slender, with many fine hairs; sternum broad, broad between hind coxae; mandibles small; a row of four or five bristles on outer edge of maxilla. Eyes are about equal, posterior row strongly recurved; the P.M.E. about diameter apart, the quadrangle of M.E. a little broader in front. Abdomen short and rounded, above with many fine white hairs, beneath at base with a broad corneous plate.

Length body 1 mm., tibia plus patella I 1 mm. One male from Barro Colorado, 31 July.

HUBBA INSIGNIS Cb.

Fig. 31, 33, 51

One male from Barro Colorado, 13 July. This is scarcely more than a *Theridion*, and may be, as Simon suggests, his *Theridion caracasenum*. The mandibles are rather large, with a long fang; the legs are more bristly than usual in *Theridion*. In my specimen the bristles on the lobe are more spine-like than in Cambridge's figure.

THERIDULA TRIANGULARIS Keys.

Frijoles, 10 July.

ANELOSIMUS EXIMIUS Keys.

Barro Colorado, 16-24 July; Ft. Sherman, 3 July; Taboga Island, 29 June. This is the social spider, its communal webs hold many specimens of both sexes which live together in amity.

ACHAEA COMPRESSA Keys.

Barro Colorado, 20 July; one appears to be this species.

CHRYSO VEXABILIS Keys.

Barro Colorado, 18 July; Frijoles, 10 July; Las Sabanas, 7 July; Ancon, July, August (Wheeler) on *Cordia*.

CHRYSO ELEGANS Tacz.

Three from Barro Colorado, 13 July.

CHRYSO NIGRIPALPIS sp. nov.

Figs. 46, 72

Cephalothorax, mandibles, sternum and abdomen above black; venter black on basal part to the furrow, then pale, with a median black V-mark. Legs (including coxae) pale yellowish, the front femora with a short black line at base in front; palpi deep black. General structure as in other species, abdomen not projecting much at tip, about twice as long as broad; legs less long than in other species, the front femora hardly as long as the abdomen, the hind femora nearly as long as the front, all legs with short fine hairs.

Length 2.1 mm.

Three females from Barro Colorado, 20-24 June.

Tetranini

LITHYPIANTES NIGROFEMORATUS Keys:

One from Barro Colorado, 16 July:

WAMBA CONGENER Cb.

One specimen of this tiny spider, Barro Colorado, 13 July.

Euryopini

SPINTHARIS FLAVIDUS Htz.

Barro Colorado, 24 June, 18 July.

THWAITESIA AFFINIS Cb.

One from Las Sabanas, 7 July.

DIPOENA STRIATIPES Simon

Barro Colorado, 20-24 June, one male of this remarkable spider.

EURYOPIS LINEATIPES Cb.

Gamboa, 9 July.

EURYOPIS NIGRIPES sp. nov.

Figs. 47, 60

♀ Cephalothorax jet black, mandibles and sternum also; legs black, except basal part of femora III and IV which are very pale, also a small pale spot at base of femur I and II above. Abdomen silvery above, with a large shield-like dark mark on base, tapering behind and almost reaching tip, behind it are one or two small dark spots; the lower posterior sides are also dark; the venter is black, a silvery area each side of the basal plate, another smaller pale area behind the vulva, and a transverse silvery mark behind the latter. Palpi mostly dark, but some pale spots on basal joints. General structure of *E. funebris*: the quadrangle of M.E. is fully as broad in front as behind, the A.M.E., no larger than P.M.E., are a trifle farther apart; the P.M.E. more than diameter apart. Abdomen broad, but pointed behind; the vulva shows a simple rounded area, longer than broad, faintly pointed in front, with a dark dot at each side, and two behind.

Length 3 mm., cephalothorax 1 mm.

One from Mt. Hope, Canal Zone, 8 July.

By shape of vulva it is closely related to *E. floricola* of South Brazil,

but the complete shield mark, and the black legs, especially tarsi, separate it.

EPISINUS COGNATUS Cambr.

Figs. 23, 45, 49, 53, 76

A male and female from Barro Colorado, C.Z., 24 July. The male has the spine at tip of bulb almost straight, and the eye-tubercle is higher than one would suppose from the Cambridge figures; the posterior eye-row is slightly recurved. The female was not known. It is very much larger than the male, mostly in the abdomen; the latter is very broad behind middle, broader than *E. bigibbosus*, and with two tubercles as in that species; each tubercle has four shining black spots, elsewhere above there are dark lines, spots, and shadings; the tips of the femora and tibia in both sexes are darker, but broader in the female. The vulva is less elongate than in *E. bigibbosus*; it is dark red-brown, showing a pale area on each posterior side.

HELVIBIS KEYSERLINGI sp. nov.

Figs. 34, 37, 67

♀ Cephalothorax reddish; black in anterior part over eye-region, and posterior part from the groove back blackish; mandibles black; palpi partly black; sternum reddish, black behind; abdomen pale yellowish, rather darker above in some specimens, with an elongate pale area each side near middle, on each anterior side is an elongate black mark broader behind and sloping downward, the tip of abdomen is sometimes dark above; legs pale yellowish, unmarked. Cephalothorax elongate, more so than in *H. thorrelli*, narrowed behind, broadest much before middle, a transverse curved furrow behind middle. Abdomen elongate, scarcely narrowed in the middle above, projecting behind the spinnerets, sometimes about as far as before them. Vulva shows a large semi-oval area, in front faintly showing two darker circular areas, behind a pale rounded area, longer than broad.

Length 3.3 to 3.5 mm.

Canal Zone, Barro Colorado, 19 July.

Argyrodes *Argyrodes*

ARGYRODES AMERICANUS Tacz.

Barro Colorado, 20-24 June, 14-23 July, 4 August.

ARGYRODES CAUDATUS Tacz.

Barro Colorado, 25 June, 17-29 July; Ancon, 5 August; Bella Vista, 6 July; Ft. Sherman, 3 July.

ARGYRODES NEPHILAE Tacz.

Ancon, 5 August; Bella Vista, 6 July.

ARGYRODES ELEVATUS Tacz.

Ancon, 5 August; Bella Vista, 8 August.

ARGYRODES JUCUNDUS Cb.

Bella Vista, 6 July.

RHOMPHOEA PROJICIENS Cb.

Barro Colorado, July.

ARIAMNES LONGICAUDATUS Keys.

Barro Colorado, 20-24 June.

LINYPHIIDAE

ERIGONINAE

CERATINELLA sp.

Barro Colorado, 15 July. One female, in appearance much like *C. emertoni*, and possibly may be it.

LINYPHIINAE

NERIENE BIPUNCTATA Keys.

Taboga Island, 29 June.

FRONTINELLA UNCATA Cb.

Many females. Barro Colorado, June, July; Frijoles, 10 July; Gamboa, 9 July; Ft. Davis, 5 July; Ancon, 7 August (Wheeler) on *Cordia*.

FRONTINELLA CALCARIFERA Keys.

A few; Barro Colorado, 19 July, Las Sabanas, 7 July. Probably the male of *uncata*.

BATHYPHANTES PLAGIATA sp. nov.

Figs. 17, 20, 40, 66

Cephalothorax pale yellowish brown, some black around eyes and the posterior lateral margins narrowly black, mandibles, legs, and sternum similarly pale. Abdomen whitish, a median black stripe above, growing broader behind and ending suddenly some distance before tip; a large black spot each side near base of the spinnerets, an elongate, curved black mark each side near base, ending beyond the furrow; venter with a large dark mark in middle. A.M.E. small, close together, farther from the much larger A.S.E., latter larger than the P.S.E.; P.M.E. largest, less than diameter apart, about their diameter from the much smaller P.S.E.; quadrangle of M.E. much broader behind.

The male palpus has a very large paracymbium, and the cymbium has an angle behind and two curved processes at base; the bulb is very large and extremely complicated. There are no teeth in front on the male mandibles.

Length 1.6 mm.

Canal Zone, Barro Colorado, 16 July.

ULOBORIDAE

ULOBORUS SIGNATUS Cb.

Barro Colorado, 20-24 June, 22 July.

ULOBORUS AEGROTUS Simon

Barro Colorado, 20-24 June.

ULOBORUS VARIEGATUS Cb.

Many, Barro Colorado, June, July.

ARISTON ALBICANS Cb.

One female, Barro Colorado, 20-24 June.

MIAGRAMMOPES ALBOGUTTATA Cb.

Several, Barro Colorado, 22 June, 15-31 July.

TETRAGNATHIDAE

TETRAGNATHINAE

TETRAGNATHA MEXICANA Keys.

Frijoles, 10 July.

TETRAGNATHA PALLIDA Cb.

Barro Colorado, 17 July.

TETRAGNATHA TENUISSIMA Cb.

Ft. Davis, 5 July; Mt. Hope, 8 July.

GLENOGNATHA CENTRALIS Chamb.

Described from Panama; the type is a true Glenognatha with large, porrect and strongly divergent jaws, provided with large teeth, of about the same size and appearance as *G. minuta* Bks.

MIMOGNATHA gen. nov.

Type *Mysucna bulbifera* Bks. (*Theridium foxi* McCook). Differs from *Glenognatha* in the shorter cephalothorax, the male mandibles not noticeably divergent nor porrect, and armed with only small teeth; the male palpus has the part beyond the large bulb, very much abbreviated, much more so than in *Glenognatha*. The abdomen is also shorter than in that genus.

MIMOGNATHA FOXI McCook

One male from Panama, Bella Vista, 6 July.

I cannot see any difference between this specimen and males from Virginia, except in the smaller size; the palpus, even in apical part, appears to be the same, and the teeth and bristles on the front of the mandibles are the same.

METINAE

PSEUDOMETA ALBOGUTTATA Cb.

Barro Colorado, 20-29 June, 13-17 July.

MECYNOMETA GLOBOSA Cb.

Two, Barro Colorado, 25 June, 22 July.

LEUCAUGE ARGYRA Walck.

Colon, 16 August; Mt. Hope, 8 July; Frijoles, 10 July; Red Tank, 30 June; Ancon, 5 August; Bella Vista, 6 July. Common, but not taken on Barro Colorado.

LEUCAUGE MANDIBULATA Cb.

Barro Colorado, 25 June, 20-30 July, 1 August.

LEUCAUGE LUGENS Cb.

Barro Colorado, 22 June, 29 July.

LEUCAUGE MOERENS Cb.

Barro Colorado, 20-24 June, two specimens.

LEUCAUGE IDONEA Cb.

Ancon, 5, 6 August; Bella Vista, 6 August; Frijoles, 10 July.

LEUCAUGE AUROSTRIATA Cb.

Gamboia, 9 July; one specimen.

EPEIRIDAE

NEPHILINAE

NEPHILA CLAVIPES Linn.

Common; Barro Colorado, Ft. Davis, Ft. Sherman, Red Tank, Bella Vista, Ancon, Taboga Island. Mostly immature, but in August becoming mature. Often webs are close together or partly connected and on the top of Ancon Hill were a large colony with practically all the webs connected and forming an immense structure from the top of a tree down to some bushes.

ARGIOPINAE

ARGIOPE ARGENTATA Fabr.

Barro Colorado, Las Sabanas, and Ft. Sherman, mostly not mature. *Gea panamensis* Chamb. is evidently the male.

GEA HEPTAGON Htz.

Barro Colorado, 20-24 June.

GASTERACANTHINAE

GASTERACANTHA KOCHI Butler

Barro Colorado, 29 July; Colon, 16 August; Ancon, 5, 6 August; Almirante (C. W. Dodge and J. D. Smith).

ACROSOMINAE

ACROSOMA MAMMILLATA Butler

Common, Barro Colorado, 20-24 June, 13-24 July; Gamboia, 9 July.

ACROSOMA LONGICAUDA Cb.

Barro Colorado, 20-24 June, 13 July. This must be the male of *mammillata*.

ACROSOMA OBTUSISPINA Keys.

Common. Barro Colorado, 20-24 June, 13-29 July; Ft. Davis, 5 July; Bella Vista, 6 July; Marajal (Wheeler). These are all typical forms as figured by Keyserling and by Cambridge, *Biologia*, plate 50, fig. 9.

ACROSOMA CORNIGERA Cb.

Barro Colorado, 13 July; Ft. Davis, 5 July. Evidently the male of *obtusispina*.

ACROSOMA SEDES Getaz

Fig. 36

Barro Colorado, 22-25 July, five females, all alike in coloration. The dorsum is yellow, with narrow black lines which outline large and small spots of the yellow. These markings are so entirely different from those of *A. obtusispina* that I believe they indicate a separate species. The small intermediate spine is usually fairly distinct, as in fact it often is in *A. obtusispina*; the spine at base of the large apical one is larger than in *A. obtusispina*. Neither these nor the specimens of *A. obtusispina* show approach to the typical *A. scxspinosa*, and I consider them perfectly distinct species therefrom.

ACROSOMA sp.

Fig. 35

A male, Barro Colorado, 30 July, has the abdomen more constricted (as seen in figure) than any species figured by Keyserling or Cambridge; it might be the male of *sedes*.

ACROSOMA PATRUELIS Koch.

Fairly common, Barro Colorado, 20-24 June, 13-17 July; Gamboa, 9 July.

ACROSOMA PETERSI Tacz.

Barro Colorado, 20-24 June; Gamboa, 9 July.

ACROSOMA SCHREIBERSI Perty

Common, Barro Colorado, 20-29 June, 13-31 July, 2 August. Not taken elsewhere, a characteristic South American species.

ACROSOMA FURCULA Cb.

Barro Colorado, 30 July, one female.

MICRATHENA QUADRISERRATA Cb.

Ft. Sherman, 3 July, one specimen.

EPEIRINAE

ERIOPHORA EDAX Blackw.

Cristobal, 10 August; Ancon, 5, 6, August.

ERIOPHORA PURPURASCENS Cb.

Barro Colorado, 20-24 June, 13-30 July.

ERIOPHORA NEPHILODES Cb.

Barro Colorado, 20-24 June, 13-31 July; Ancon, 5 August.

EUSTALA FUSCOVITTATA Keys.

Barro Colorado, 17 July; Colon, 16 August; Mt. Hope, 8 July; Frijoles, 10 July; Gamboa, 9 July; Las Sabanas, 7 July; Bella Vista, 4 August; Ancon, 5 August; Punto Paitea (Wheeler).

EUSTALA BIFIDA Cb.

Barro Colorado, 20-24 June, July (C. W. Dodge).

EUSTALA GUTTATA Cb.

Mt. Hope, 8 July, two specimens.

EUSTALA CONFORMANS Chamb.

The male type agrees well with *minuscula*, which is hardly more than a variety of the widespread *vegeta*.

EPEIRA INCERTA Cb.

Ft. Sherman, 3 July.

EPEIRA TRUNCATA Keys.

Barro Colorado, 18 July, one specimen.

EPEIRA TRISPINOSA Keys.

Ft. Sherman, 3 July, one example.

EPEIRA SOLERSIOIDES Cb.

Ancon, 6 August; Bella Vista, 7 August; Taboga Island, 29 June.

EPEIRA PALLIDULA Keys.

Barro Colorado, 15-24 July; Gamboa, 9 July.

EPEIRA GLABRATA Cb.

Common, Barro Colorado, 13 July; Ft. Sherman, 3 July; Ft. Davis, 5 July; Frijoles, 10 July; Red Tank, 30 June; Las Sabanas, 7 July.

EPEIRA DETRIMENTOSA Cb.

Barro Colorado, 20 July, one specimen.

EPEIRA CHAMPIONI Cb.

Common on Barro Colorado, 24-31 July, 1 August.

EPEIRA SEXTA Chamb.

Described in his Peruvian paper, but from Panama. The type is immature; it has a great resemblance to *E. scutulata*, but in structure very different. The cephalothorax is plainly a little higher at middle than in front; the groove broadly curved. The numerous short spines on the legs toward tip separate it.

EPEIRA ALBOSTRIATA Keys.

Frijoles, 10 July; Las Sabanas, 7 July.

METAZYGIA KEYSERLINGI sp. nov.

Fig. 63

Cephalothorax, mandibles, and sternum dull yellowish, head blackish; legs dull yellowish, front femora dark toward tip above, tibiae and metatarsi also dark near tip. Abdomen whitish above, two large elongate dark marks at base (the beginning of an indistinct or obsolete folium), sides black, lower sides narrowly white, venter black, with median triangular white spot. Cephalothorax moderately broad; abdomen elliptical; vulva broad, no basal projection. Legs hairy, femora without spines below, but some below on tibiae and metatarsi; all legs rather short. Length 4-4.5 mm.

From Barro Colorado, 20-24 June, 13 July.

It greatly resembles Keyserling's figure of *Epeira genialis* from southern Brazil. The vulva is also very similar. It is, however, much

smaller, and with pale sternum, while Keyserling says nothing about black sides, and venter with median pale spot, so it is probably distinct therefrom.

METAZYGLIA GREGALIS Cb.

Red Tank, 30 June. *Eustala tuceps* of Chamberlin is this species.

CYCLOSA CAROLI Htz.

Three from Barro Colorado, 2 August.

CYCLOSA WALCKENAERI Cb.

Two from Bella Vista, 8 August.

MANGORA BIMACULATA Cb.

Many, Barro Colorado, 14-31 July.

MANGORA PICTA Cb.

Barro Colorado, 22 June, 30 July.

MANGORA SPINULA Cb.

Males, Barro Colorado, 22 June; Red Tank, 1 July.

MANGORA TRILINEATA Cb.

Common, Barro Colorado, 20-24 June; Ft. Sherman, 3 July; Ft. Davis, 5 July; Mt. Hope, 8 July; Frijoles, 10 July; Gamboa, 9 July.

ACACESIA FOLIATA Htz.

Ancon, 9 August; Bella Vista, 2 July; Las Sabanas, 7 July; Mt. Hope, 8 July.

METEPEIRA LABYRINTHEA Htz.

Barro Colorado, 15 July, one specimen.

WAGNERIANA TAURICORNIS Cb.

Barro Colorado, 20-24 July.

The shoulder cusps are simple in these specimens.

WAGNERIANA SPICATA Cb.

Two specimens from Ft. Sherman, 3 July, and Ancon, 5 July, are probably this species, but the shoulder cusps are simple.

PARAWIXIA DESTRICTA Cb.

Barro Colorado, June, one specimen. A male from Taboga Island may be another species.

PRONOUS BEATUS Cb.

Barro Colorado, 20-24 June, 16-20 July.

EDRICUS CRASSICAUDA Keys.

Many from Barro Colorado, 20-24 June, 13-30 July, 2 August.

WITICA THALIS Cb.

One from Barro Colorado, 20-24 June.

SCOLODERUS AMERICANUS Cb.

Barro Colorado, 20 July, one specimen.

VERRUCOSA RETICULATA Cb.

Almirante, Bocas del Toro, July, August (C. W. Dodge).

VERRUCOSA MEXICANA Lucas

Barro Colorado, 21 July (Wheeler).

MIMETIDAE

MIMETUS BIGIBBOSUS Cb.

Barro Colorado, 13-31 July.

GELANOR ZONATUS Koch.

One from Barro Colorado, 24 June.